Arkansas Year 2000 Statewide Oral Health Needs Assessment Survey:

Findings and Conclusions



Arkansas Department of Health

smiles

"Keeping Your Hometown ^ Healthy"

Office of Oral Health Lynn Douglas Mouden, DDS, MPH, Director May 2000

Arkansas Oral Health Needs Assessment Survey: Findings and Conclusions

Purpose

The Office of Oral Health, created in the Arkansas Department of Health in 1999, faces new challenges in assessment, policy development and assurance as it relates to dental public health in our state. Because little data has ever been collected on oral health needs within Arkansas, the first challenge was to collect baseline data on oral health. With an appropriate database, decisions can be made to guide dental public health policy. To that end, during the spring of 2000, the Department provided support for a statewide oral health needs assessment.

In addition, data is necessary for reporting to agencies of the federal government. The Health Resources and Services Administration's (HRSA) Maternal and Child Health Bureau provides leadership, partnership opportunities and resources to advance the health of the Nation's mothers, infants, children, adolescents and families through Title V of the Maternal and Child Health (MCH) Block Grant. The block grants provided to states create federal/state partnerships to develop community service systems to meet critical challenges in maternal and child health. These challenges include reducing infant mortality, providing comprehensive care for children and adolescents with special health care needs, reducing adolescent pregnancy and providing comprehensive prenatal care. As required by the block grant, Arkansas reports annually on eighteen national performance measures and eight state-selected performance measures related to maternal and child health.

One of the national performance measures is the percent of third-grade children who have received protective sealants on at least one permanent molar tooth. Dental caries (tooth decay) affects two-thirds of children by the time they are 15 years of age. Developmental irregularities, called pits and fissures, are

the sites for 80-90% of childhood caries. Dental sealants selectively protect these vulnerable sites, which are found mostly in permanent molar teeth. Targeting dental sealants to those children at greatest risk for caries has been shown to increase their cost effectiveness. Although dental sealants in conjunction with community water fluoridation have the potential to prevent almost all childhood tooth decay, sealants have been underutilized.

Methods

Sealant utilization and assessment of oral health requires primary data collection or screening of a representative sample of school children. During 1999, the Arkansas Oral Health Advisory Committee developed a plan to collect data on sealant utilization. This plan was expanded for the 2000 survey to include data on decayed, missing and filled primary and permanent teeth; caries rates; and untreated caries along with sealant data.

Elementary schools were randomly selected for the study. Letters of invitation to participate in the study were sent to eighteen school superintendents across Arkansas in November 1999. All eighteen superintendents invited to participate agreed to assist with the survey. Each superintendent notified the Office of Oral Health as to which class in the selected schools would participate.

An information sheet on dental sealants, explaining the survey, was sent to each student's home along with a permission slip for survey participation. Only students whose parents or guardians signed and returned permission form were screened.

Only licensed dentists are allowed to perform dental examinations in Arkansas. Although the 1999 study used eighteen different volunteer dentists, the 2000 survey was conducted entirely by the Director, Office of Oral Health to maximize comparability of data. The Director traveled across the state during February, March and April, visiting all eighteen schools and examining 299 children.

Each classroom visit included a grade-appropriate educational opportunity on oral health followed by the examinations. Examinations were conducted in

the classroom utilizing a portable dental light, and sterile, single-use mirrors and explorers. Each school was asked to provide an adult to enter data as it was collected. Some schools provided adult volunteers while in most schools the teacher did the data entry. The newly created recording form allowed for easy data entry by non-dental personnel.

Following the examinations, each student was provided with a referral form to take home. The form stated that school-based screenings do not take the place of regular dental examinations in a dental office, but are to collect data on a large population. The form allowed the examiner to indicate to the parents that oral health conditions were adequate, conditions existed that needed attention when convenient, or that conditions existed that needed immediate attention. Referrals in the most serious category indicated that the child had apparent pulpal involvement, the child already experienced pain or, in the examiner's clinical judgment, the conditions would soon cause abscess or pain. Referrals in the second or third categories were not made if, in the examiner's opinion, a carious primary tooth would be exfoliated before more adverse conditions presented.

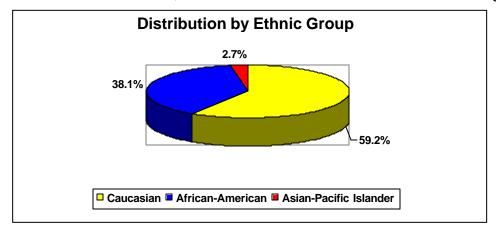
An estimate of socio-economic level was made using the percentage of children participating or eligible for the free or reduced-cost lunch program. Free/reduced lunch data for each school was provided by the Arkansas Department of Education.

Following completion of data collection, all teachers involved were sent thank you letters with an enclosed survey to measure their satisfaction with the classroom interaction. They were queried about the paperwork involved, the oral health education provided, the disruption of the class schedule and whether they would be willing to participate again in the future.

Findings

Survey Subjects:

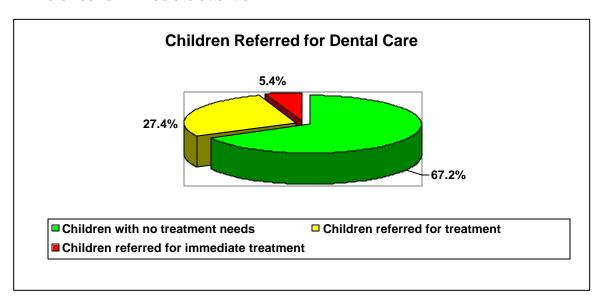
- A total of 299 children were examined.
- Of the 229 children participating, 177 were Caucasian (including Hispanics),
 114 were African-American, and 8 were of Asian or Pacific Islander heritage.



 An additional 54 children did not participate either because no permission slip was returned or because the parents asked that their child be excluded from the survey.

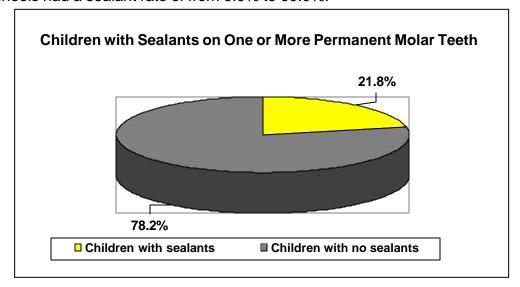
Referrals:

• 82 children (27%) were referred for dental care with an additional 16 (5%) referred for immediate attention.

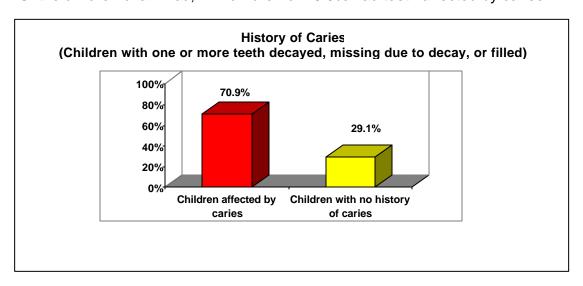


Sealant and Caries Rates:

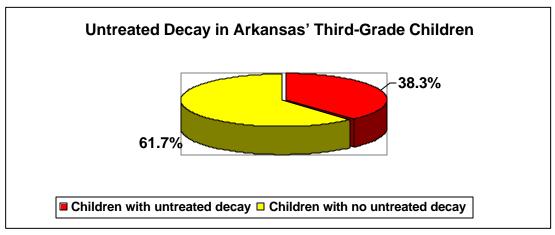
• 21.8% of children examined had at least one dental sealant. Individual schools had a sealant rate of from 0.0% to 60.0%.



- The 299 children examined had 893 teeth that had been affected by decay, meaning that the tooth was decayed, had already been filled, or had been lost prematurely due to decay. This results in a DMF (decayed, missing or filled) rate of 2.99, meaning that on the average, each third-grade student in the survey has approximately three teeth that are decayed, or have been decayed.
- Of the children examined, 212 children or 70.9% had teeth affected by caries.



• Of the children examined, 115 children or 38.3% had untreated dental caries.



Socio-economic Indicators:

• 59% of the children participate or are digible for the free or reduced cost lunch program in their schools. The rate of eligibility in the individual schools ranged from a low of 8% to a high of 94%.

Follow-up Evaluation:

 Fifty percent of the teachers returned the follow-up survey. All responses either agreed or strongly agreed with the survey statements.

Statement A. Arrangements before the survey were well handled.

Strongly agree	Agree	Neutral	Disagree	Strongly disagree
81.8%	18.2%	0.0%	0.0%	0.0%

Statement B. The permission letter and information sheet were adequately designed to gain parental support.

Strongly agree	Agree	Neutral	Disagree	Strongly disagree
72.7%	27.3%	0.0%	0.0%	0.0%

Statement C. The paperwork associated with data collection was easily completed.

Strongly agree	Agree	Neutral	Disagree	Strongly disagree
90.9%	9.1%	0.0%	0.0%	0.0%

Statement D1. The accompanying education program was of appropriate length.

Strongly agree	Agree	Neutral	Disagree	Strongly disagree
72.7%	27.3%	0.0%	0.0%	0.0%

Statement D2. The accompanying education program was presented at an appropriate level for my students.

Strongly agree	Agree	Neutral	Disagree	Strongly disagree
81.8%	18.2%	0.0%	0.0%	0.0%

Statement E. The oral health survey was conducted in a manner to minimize disruption to the class and the day's schedule.

Strongly agree	Agree	Neutral	Disagree	Strongly disagree
90.9%	9.1%	0.0%	0.0%	0.0%

Statement F. I would be willing to participate in the survey again.

Strongly agree	Agree	Neutral	Disagree	Strongly disagree
81.8%	18.2%	0.0%	0.0%	0.0%

Comments:

"I was pleased with the survey and so glad that I had so many students who participated. Thank you!!"

"It would have been nice for my students to be given a related activity (word find, color sheet, etc) to work on while the survey was being done."

"Thanks for letting us participate. Would like all 3rd grade classes to be screened."

"Excellent presentation." "I will be at a different location next year. I hope I will be able to participate."

Discussion

According to the National Institutes of Health, the placement of sealants is a highly effective means of preventing pit and fissure caries. Sealants are safe and placed easily and painlessly. Sealants are currently underused in both private and public dental care delivery systems. Sealant usage in Arkansas is

slightly lower than the national rate (21.8% compared to 23.0% from NHANES III) while the Healthy People 2010 objective 9.9a calls for increasing the proportion of 8-year-old children who have received dental sealants on their first permanent molars to 50%.

The sealant rate did not show significant differences based on ethnic group. The highest sealant rates were seen in schools with the lowest percentage of children on the free and reduced-cost lunch program (60/0%) and a school located across the street from a hospital-based dental clinic that treats many of the children in the school (62.5%).

The rate of untreated caries was lowest in the school with the highest socio-economic indicator. The overall rate of 38.5% of all third-graders with untreated caries points out that access to quality dental care continues to be a problem for many children. This data shows that Arkansas lags seriously behind the Healthy People 2010 goal of 16% of 6-8 year olds with untreated caries on primary and permanent teeth.

During discussions with the children during survey, the examiner discovered that many children with mild to severe dental problems either had no regular dentist or had never seen a dentist. The problem of access to dental care will only increase in the coming years as the number of dentists licensed in Arkansas decreases.

The reasons for the underutilization of sealants are complex, but are affected in great part by the personal preferences of local dentists and their auxiliaries. Intensive efforts should be undertaken to increase sealant use through professional and lay education. Expanding the use of sealants would substantially reduce the occurrence of dental caries in this population.

The 1960's era of "Look mom, no cavities" has not yet arrived in Arkansas. Seven out of ten children are still affected by dental caries. Because Arkansas currently has only 58% of the population served by community water systems enjoying the benefits of water fluoridation (cp. Healthy People 2010 Objective of 75%) and no state-wide fluoride mouth rinse initiative, efforts to expand sealant

usage along with these other proven preventive measures must be expanded to protect the oral health of our children.

Summary:

The Year 2000 Arkansas Oral Health Needs Assessment Survey shows that only 21.8% of children surveyed had one or more dental sealants on permanent molars compared to the national Healthy People 2010 goal of 50%. The majority (70.9%) of all children surveyed had been affected by dental disease with an average of almost three decayed teeth per child (DMF = 2.99). Access to dental care is unattainable for many children, evidenced by the high number of children with untreated dental decay (38.3%). Efforts and resources must be targeted to increase the use of dental sealants, increase the percentage of Arkansans that enjoy the benefits of community water fluoridation, and assure that specific preventive and restorative dental services be provided to those children at greatest risk of oral disease.

Attachments:

Survey data set

List of participating schools

Superintendent's introductory letter

Superintendent's fax-back form

Confirmation letter

Parental permission slip

Parents' information sheet

Data entry form

Referral form

Teachers' follow-up letter

Teachers' follow-up survey